IN THE UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF TEXAS SHERMAN DIVISION

X-MOBILE TECHNOLOGIES LLC,

Plaintiff,

v.

ZTE CORPORATION, ZTE (TX), INC., and ZTE (USA) INC.

Defendants.

CIVIL ACTION NO. 4:17-cv-696

FIRST AMENDED COMPLAINT FOR PATENT INFRINGEMENT

JURY TRIAL DEMANDED

FIRST AMENDED COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff X-Mobile Technologies LLC ("X-Mobile") files this first amended complaint against ZTE Corporation, ZTE (TX), Inc., and ZTE (USA) Inc. ("Defendants" or "ZTE"), alleging, based on its own knowledge as to itself and its own actions and based on information and belief as to all other matters, as follows:

PARTIES

- X-Mobile is a limited liability company formed under the laws of the State of Texas.
- 2. Defendant ZTE Corporation is a Chinese corporation with a place of business at ZTE Plaza, Keji Road South, Hi-Tech Industrial Park, Nanshan District, Shenzhen, Guangdong Province, People's Republic of China 518057.
- 3. Defendant ZTE (TX), Inc. is a corporation organized and existing under the laws of the state of Texas and may be served with process through its registered agent, Ferguson, Braswell & Fraser, PC at 2500 Dallas Parkway, Suite 501, Plano, Texas 75093. ZTE (TX), Inc. is a wholly-owned subsidiary of ZTE Corporation.

4. Defendant ZTE (USA) Inc. is a corporation organized and existing under the laws of the state of New Jersey, with a place of business at 2425 North Central Expressway, Suite 800, Richardson, Texas and may be served with process through its registered agent, Jing Li, 2425 N. Central Expressway, Suite 323, Richardson, Texas 75080. ZTE (USA) Inc. is a whollyowned subsidiary of ZTE Corporation.

JURISDICTION AND VENUE

- 5. This is an action for infringement of United States patents arising under 35 U.S.C. §§ 271, 281, and 284–85, among others. This Court has subject matter jurisdiction of the action under 28 U.S.C. §1331 and §1338(a).
- 6. Venue is proper in this district pursuant to 28 U.S.C. § 1400(b). ZTE has transacted business in this district and has committed, by itself or in concert with others, acts of patent infringement in this district. ZTE has a regular and established place of business in this district at least at a local call center at 6865 Windcrest Dr., Plano, TX 75024. ZTE (TX) resides in the District because it is incorporated in Texas pursuant to 28 U.S.C. § 1391(d).
- 7. Defendants are subject to this Court's specific and general personal jurisdiction pursuant to due process and/or the Texas Long Arm Statute, due at least to Defendants' substantial business in this forum, including: (i) at least a portion of the infringements alleged herein; and/or (ii) regularly doing or soliciting business, engaging in other persistent courses of conduct, and/or deriving substantial revenue from goods and services provided to individuals in Texas and in this district.

COUNT I

DIRECT INFRINGEMENT OF U.S. PATENT NO. 7,162,426

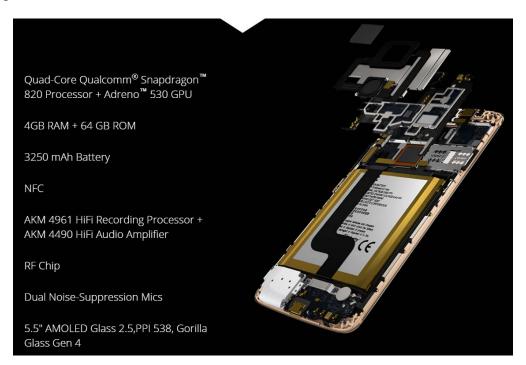
- 8. On January 9, 2007, United States Patent No. 7,162,426 ("the '426 Patent") was duly and legally issued by the United States Patent and Trademark Office for an invention entitled "Computer Motherboard Architecture with Integrated DSP for Continuous and Command and Control Speech Processing."
- 9. X-Mobile is the owner of the '426 Patent, with all substantive rights in and to that patent, including the sole and exclusive right to prosecute this action and enforce the '426 Patent against infringers, and to collect damages for all relevant times.
- 10. Defendants made, had made, used, imported, provided, supplied, distributed, sold, and/or offered for sale products and/or systems including, for example, their Galaxy S8 phone family of products that have a Snapdragon 820 system on a chip with a DSP for voice assistant and/or Okay Google functionality (the "accused products"):





(Source: https://www.zteusa.com/axon-7/)

- 11. By doing so, Defendants have directly infringed (literally and/or under the doctrine of equivalents) at least Claims 1 and 20 of the '426 Patent. Defendants' infringement in this regard is ongoing.
- 12. ZTE has infringed the '426 Patent by making, having made, using, importing, providing, supplying, distributing, selling or offering for sale products with a computer motherboard architecture.
- 13. The accused products include a computer motherboard possessing typical components including a CPU, a data bus, a power interface, and an audio input data pathway connecting the audio input of the motherboard to the CPU.
- 14. The accused products include a DSP chip in the audio input data path, wherein the DSP chip is co-located with the CPU on the motherboard:



(Source: https://www.zteusa.com/axon7/)



(Source: from 820 Processor Product Brief downloaded at

https://www.qualcomm.com/documents/snapdragon-820-processor-product-brief)

- 15. The accused products include a bridge interfacing between said DSP chip and the bus on the computer motherboard.
 - 16. The accused products include a memory in said DSP chip.
- 17. The accused products include a command and control speech engine (for example, voice assistant and/or Okay Google) residing in said memory of said DSP chip:

Highly Efficient

High-End Hardware Support

AXON 7 has a Qualcomm Snapdragon 820 processor, 4 GB/6 GB RAM, two dedicated audio chips and 4G network support. Furthermore, the system is optimized to ensure the phone responds and executes voice commands quickly.

A High Recognition Rate

AXON 7 has an industry-leading speech recognition rate. This is the result of numerous hardware design adjustments, software parameter tuning, and constant testing and optimization under noisy environments.

Easy to Use

Offline Support

AXON 7 supports offline voice recognition and locally loaded speech recognition grammars. Even when there is no network connection or the connection is poor, you can still use your voice to perform local operations such as making phone calls, playing music, taking photos and activating the driving mode. Since there is no round trip to the server, the recognition speed is faster. This also better protects user's privacy.

Easily Activated

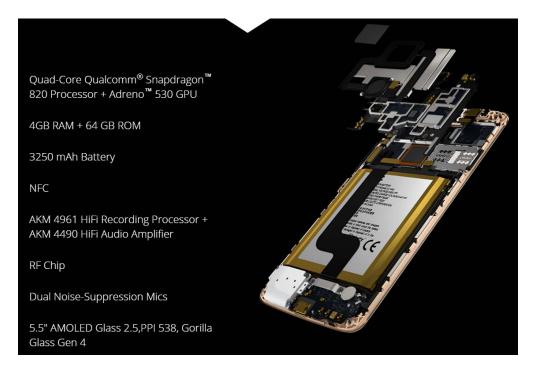
Voice control functions on AXON 7 are convenient to use. ZTE was the first Android phone maker to use the home button to wake up the assistant. ZTE was also the first to bring about the concept of system-wide voice control. You can start the voice assistant whether you are listening to music or browsing a webpage. ZTE's voice assistant is a back-end service for the entire phone, and voice is just an alternative input method.

(Source:

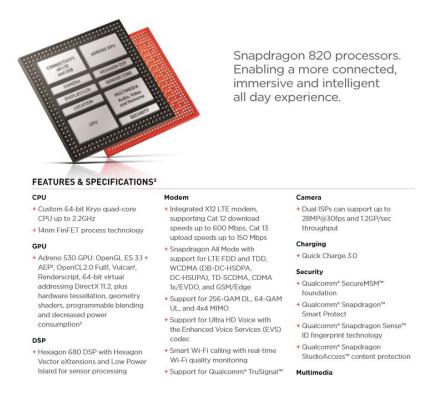
http://wwwen.zte.com.cn/endata/magazine/mobileworld/2016/4/articles/201608/t20160830_460 194.html)

- 18. The accused products include a DSP enabled to operate in either command and control mode or continuous speech mode and that serves as the preprocessor of all speech input prior to execution of instructions by the CPU to process the speech input.
- 19. The accused products include a speech engine that includes a vocabulary of speech terms enabled to be loaded into said memory which are associated with specific instructions or contextual environments.
- 20. The accused products include a DSP enabled to be dynamically set by a user in either a continuous speech mode or a command and control mode.

- 21. ZTE has also infringed the '426 Patent by making, having made, using, importing, providing, supplying, distributing, selling or offering for sale products using a method of processing speech.
- 22. The method practiced by the accused products includes setting a computer in either command and control mode or continuous speech mode.
- 23. The method practiced by the accused products includes inputting speech into an audio input device wherein said audio input device is electrically connected to said computer.
- 24. The method practiced by the accused products includes converting speech from an analog format to an audio digital signal.
- 25. The method practiced by the accused products includes transmitting said digital signal to a digital signal processor, wherein said digital signal processor is co-located with a CPU on a motherboard of said computer:



(Source: https://www.zteusa.com/axon7/)



(Source: from 820 Processor Product Brief downloaded at

https://www.qualcomm.com/documents/snapdragon-820-processor-product-brief)

- 26. The method practiced by the accused products includes said digital signal processor is enabled to function as a preprocessor of all speech input, analyzing said digital signal with at least said digital signal processor and a speech engine residing in a memory of said digital signal processor on said motherboard and electrically connected to said digital signal processor.
- 27. The method practiced by the accused products includes loading an appropriate vocabulary into said speech engine in said or of said digital signal processor, depending on the context of the operation being performed by a user.
- 28. The method practiced by the accused products includes transmitting said analyzed digital signal of a computer command to a processor in electrical connection to said digital signal

processor and said computer and transmitting said analyzed digital signal of continuous speech to a processor in electrical connection to said digital signal processor and said computer.

29. The method practiced by the accused products includes performing an operation or command representative of said analyzed digital signal by said processor:

Voice- and Motion-Activated Dialing

Voice and motion control provides a quick and convenient way to make calls. You no longer need to unlock the screen, search for a contact, and then dial the number. You only need to take the phone out, turn the screen on (on lock, standby, address book or dialing interface), and place the phone next to your ear. You can then tell your phone to call a specific contact.

Voice-Activated Camera

Taking selfies has become a pervasive trend. However, if you have to simultaneously frame the view and tap the shutter, you may shake your hand and your photos will end up being blurry. With AXON 7, you can use the voice commands to take selfies, turn the flashlight off/on, switch between front and rear cameras and turn off the camera.

Music Voice Control

AXON 7 has greatly optimized music voice control. You can tell your phone to play a song, an artist, or locally stored songs. You can also use voice commands to skip songs, pause, adjust volume, move to the next/previous track, repeat a single song, shuffle within a playlist and add a song to Favorites. ZTE has its own special noise elimination algorithm, and you can still control the music under a noisy environment.

Moreover, you can use AXON 7's voice assistant to start a pre-installed app or a third-party app, turn on/off commonly used system settings and search pictures by time and location.

Summary

AXON 7 has system-level voice control which can even be used offline. In addition to the voice control features mentioned above, the phone also supports driving mode, voice translation, and real-time voice-to-text input, making the phone a strong contender in the high-end smartphone market.

(Source:

http://wwwen.zte.com.cn/endata/magazine/mobileworld/2016/4/articles/201608/t20160830_460_194.html)

- 30. ZTE has had knowledge of the '426 Patent at least as of the date when it was notified of the filing of this action.
- 31. X-Mobile has been damaged as a result of the infringing conduct by Defendants alleged above. Thus, Defendants are liable to X-Mobile in an amount that adequately

compensates it for such infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

32. X-Mobile and/or its predecessors-in-interest have satisfied all statutory obligations required to collect pre-filing damages for the full period allowed by law for infringement of the '426 Patent.

COUNT II

DIRECT INFRINGEMENT OF U.S. PATENT NO. 6,690,351

- 33. On February 10, 2004, United States Patent No. 6,690,351 ("the '351 Patent") was duly and legally issued by the United States Patent and Trademark Office for an invention entitled "Computer Display Optimizer."
- 34. X-Mobile is the owner of the '351 Patent, with all substantive rights in and to that patent, including the sole and exclusive right to prosecute this action and enforce the '351 Patent against infringers, and to collect damages for all relevant times.
- 35. Defendants made, had made, used, imported, provided, supplied, distributed, sold, and/or offered for sale products and/or systems including its Axon smartphone and AT&T Primetime tablet families of products (the "accused products"):





(Source: https://www.zteusa.com/axon-7/)



(Source: https://www.zteusa.com/att-primetime)

- 36. By doing so, Defendants have directly infringed (literally and/or under the doctrine of equivalents) at least Claim 1 of the '351 Patent. Defendants' infringement in this regard is ongoing.
- 37. ZTE has infringed the '351 Patent by making, having made, using, importing, providing, supplying, distributing, selling or offering for sale hands free user or operator supported mobile computer systems having hands free, activating means, a processor and a display means, with the processor in electrical connection to the display means.
- 38. The accused products include at least one sensor for optimizing internal settings in said display when said sensor and said display are in communication:

Changing Screen Brightness

- Touch the Home button >

 Settings > All settings > Display > Brightness level.
- 2. Drag the slider to manually adjust the screen brightness.
- NOTE: To set the phone to automatically adjust the screen brightness for available light, turn the feature on and off by touching Automatic brightness in the Brightness level window.

(Source:

https://d28dq596ebml6z.cloudfront.net/media/wysiwyg/Axon7/ZTE_AXON_7_User_Manual_V 1.0.pdf)



(Source: photo of purchased product)

- 39. The accused products include means in the computer to receive information from the sensor and to transmit it to a data processing means.
- 40. The accused products include means to translate the data into computer commands to effect control and alteration of the computer system to coincide with any changes resulting from input of the sensor:

Changing Screen Brightness

- 2. Drag the slider to manually adjust the screen brightness.
- NOTE: To set the phone to automatically adjust the screen brightness for available light, turn the feature on and off by touching Automatic brightness in the Brightness level window.

(Source:

https://d28dq596ebml6z.cloudfront.net/media/wysiwyg/Axon7/ZTE_AXON_7_User_Manual_V 1.0.pdf)



(Source: photo of purchased product)

- 41. The accused products include that the sensor is enabled to at least measure conditions and optimize internal settings based upon environmental conditions and the type of the display means and reflectivity characteristics of a physical glass and coatings of the display means.
- 42. ZTE has had knowledge of the '351 Patent at least as of the date when it was notified of the filing of this action.
- 43. X-Mobile has been damaged as a result of the infringing conduct by Defendants alleged above. Thus, Defendants are liable to X-Mobile in an amount that adequately compensates it for such infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.
- 44. X-Mobile and/or its predecessors-in-interest have satisfied all statutory obligations required to collect pre-filing damages for the full period allowed by law for infringement of the '351 Patent.

COUNT III

DIRECT INFRINGEMENT OF U.S. PATENT NO. 6,262,889

- 45. On July 17, 2001, United States Patent No. 6,262,889 ("the '889 Patent") was duly and legally issued by the United States Patent and Trademark Office for an invention entitled "Insulated Mobile Computer."
- 46. X-Mobile is the owner of the '889 Patent, with all substantive rights in and to that patent, including the sole and exclusive right to prosecute this action and enforce the '889 Patent against infringers, and to collect damages for all relevant times.

47. Defendants made, had made, used, imported, provided, supplied, distributed, sold, and/or offered for sale products and/or systems including its Prestige smartphone and AT&T Primetime tablet families of products (the "accused products"):



(Source: https://www.bestbuy.com/site/virgin-mobile-zte-prestige-2-4g-lte-with-16gb-memory-prepaid-cell-phone-black/5709715.p?skuId=5709715)



(Source: https://www.zteusa.com/att-primetime)

48. By doing so, Defendants have directly infringed (literally and/or under the doctrine of equivalents) at least Claim 1 of the '889 Patent. Defendants' infringement in this regard is ongoing.

- 49. ZTE has infringed the '889 Patent by making, having made, using, importing, providing, supplying, distributing, selling or offering for sale user supported, hands-free activation computer systems having a computer housing and a display means, the computer housing consisting of all of the components of a conventional computer and having located therein a battery to supply power to the system.
 - 50. The accused products include hands-free activation:



(Sources: https://www.zteusa.com/zte-prestige-2 and https://www.zteusa.com/att-primetime)

- 51. The accused products include the computer housing having a section that will be adjacent the user when in use and supported by the user.
- 52. The accused products include that the section is constructed of a heat insulating material and forming thereby an internal insulating wall.
- 53. The accused products include the battery comprising an insulating cover which is located in said housing immediately adjacent the internal insulating wall to provide thereby double insulation for any heat generated by the system within the computer housing at a location closest to the user when in use:



(Source: https://www.youtube.com/watch?v=kH5aNpY36ck)



(Source: https://www.youtube.com/watch?v=kH5aNpY36ck)



(Source : photo of purchased product)



(Source : photo of purchased product)

- 54. ZTE has had knowledge of the '889 Patent at least as of the date when it was notified of the filing of this action.
- 55. X-Mobile has been damaged as a result of the infringing conduct by Defendants alleged above. Thus, Defendants are liable to X-Mobile in an amount that adequately compensates it for such infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.
- 56. X-Mobile and/or its predecessors-in-interest have satisfied all statutory obligations required to collect pre-filing damages for the full period allowed by law for infringement of the '889 Patent.

COUNT IV

DIRECT INFRINGEMENT OF U.S. PATENT NO. 6,958,905

- 57. On October 25, 2005, United States Patent No. 6,958,905 ("the '905 Patent") was duly and legally issued by the United States Patent and Trademark Office for an invention entitled "Mobile Body-Supported Computer with Battery."
- 58. X-Mobile is the owner of the '905 Patent, with all substantive rights in and to that patent, including the sole and exclusive right to prosecute this action and enforce the '905 Patent against infringers, and to collect damages for all relevant times.
- 59. Defendants made, had made, used, imported, provided, supplied, distributed, sold, and/or offered for sale products and/or systems including its Quartz smartwatch family of products (the "accused products"):



(Source: https://www.zteusa.com/zte-quartz)

- 60. By doing so, Defendants have directly infringed (literally and/or under the doctrine of equivalents) at least Claim 14 of the '905 Patent. Defendants' infringement in this regard is ongoing.
- 61. ZTE has infringed the '905 Patent by making, having made, using, importing, providing, supplying, distributing, selling or offering for sale mobile body supported computers.
- 62. The accused products include a computer housing including substantially all components of a conventional computer, with a first surface near a user's body, and a second surface located opposite to the first surface.
- 63. The accused products include a heat insulating member positioned on at least one of the first surface or the second surface:



Speaking of buttons, the ZTE Quartz features a single button at 2 o'clock that offers quick access to your installed apps and Google Assistant. A single click brings up a list of your apps while a long press will activate Google Assistant without the need to use the "OK Google" hotword.

The Quartz features a stainless steel case with a plastic back that houses the charging pins. Notably absent here is a heart rate monitor, so fitness buffs won't be pleased.

(Source: http://www.techradar.com/reviews/zte-quartz-review)

- 64. The accused products include an integral battery with casing, the casing being partially constructed of a thermally non-conducting material:
 - Long Battery Life: Fitted with a large 500mAH battery, the Quartz allows consumers to enjoy the smart watch anytime without having to worry about running out of battery.

(Source: https://www.zteusa.com/zte-quartz)

65. The accused products include means for activating the computer hands-free:



(Source: photo of purchased product)

- 66. The accused products include means for supporting the computer housing by a user.
- 67. ZTE has had knowledge of the '905 Patent at least as of the date when it was notified of the filing of this action.
- 68. X-Mobile has been damaged as a result of the infringing conduct by Defendants alleged above. Thus, Defendants are liable to X-Mobile in an amount that adequately compensates it for such infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.
- 69. X-Mobile and/or its predecessors-in-interest have satisfied all statutory obligations required to collect pre-filing damages for the full period allowed by law for infringement of the '905 Patent.

ADDITIONAL ALLEGATIONS REGARDING INDIRECT INFRINGEMENT

- 70. Defendants have also indirectly infringed the '426, '351, '889, and '905 Patents by inducing others to directly infringe the '426, '351, '889, and '905 Patents. Defendants have induced the end-users, Defendants' customers, to directly infringe (literally and/or under the doctrine of equivalents) the '426, '351, '889, and '905 Patents by using the accused products. Defendants took active steps, directly and/or through contractual relationships with others, with the specific intent to cause them to use the accused products in a manner that infringes one or more claims of the patents-in-suit, including, for example, claim 20 of the '426 Patent, claim 1 of the '351 Patent, claim 1 of the '889 Patent, and claim 14 of the '905 Patent. Such steps by Defendants included, among other things, advising or directing customers and end-users to use the accused products in an infringing manner; advertising and promoting the use of the accused products in an infringing manner; and/or distributing instructions that guide users to use the accused products in an infringing manner. Defendants performed these steps, which constitute induced infringement, with the knowledge of the '426, '351, '889, and '905 Patents and with the knowledge that the induced acts would constitute infringement. Defendants were and are aware that the normal and customary use of the accused products by Defendants' customers would infringe the '426, '351, '889, and '905 Patents. Defendants' inducement is ongoing.
- 71. Defendants have also induced their affiliates, or third-party manufacturers, shippers, distributors, retailers, or other persons acting on its or its affiliates' behalf, to directly infringe (literally and/or under the doctrine of equivalents) the '426, '351, '889, and '905 Patents by importing, selling or offering to sell the accused products. Defendants took active steps, directly and/or through contractual relationships with others, with the specific intent to cause such persons to import, sell, or offer to sell the accused products in a manner that infringes one

or more claims of the patents-in-suit, including, for example, claim 1 of the '426 Patent, claim 1 of the '351 Patent, claim 1 of the '889 Patent, and claim 14 of the '905 Patent. Such steps by Defendants included, among other things, making or selling the accused products outside of the United States for importation into or sale in the United States, or knowing that such importation or sale would occur; and directing, facilitating, or influencing its affiliates, or third-party manufacturers, shippers, distributors, retailers, or other persons acting on its or their behalf, to import, sell, or offer to sell the accused products in an infringing manner. Defendants performed these steps, which constitute induced infringement, with the knowledge of the '426, '351, '889, and '905 Patents and with the knowledge that the induced acts would constitute infringement. Defendants performed such steps in order to profit from the eventual sale of the accused products in the United States. Defendants' inducement is ongoing.

72. Defendants have also indirectly infringed by contributing to the infringement of the '426, '351, '889, and '905 Patents. Defendants have contributed to the direct infringement of the '426, '351, '889, and '905 Patents by the end-user of the accused products. The accused products have special features that are specially designed to be used in an infringing way and that have no substantial uses other than ones that infringe the '426, '351, '889, and '905 Patents, including, for example, claim 20 of the '426 Patent, claim 1 of the '351 Patent, claim 1 of the '889 Patent, and claim 14 of the '905 Patent. The special features include a DSP with a command and control speech engine used in a manner that infringes the '426 Patent. The special features also include automatic brightness settings to be used in a manner that infringes the '351 Patent. The special features also include voice activation features used in a manner that infringes the '889 Patent and in a manner that infringes the '905 Patent. The special features constitute a material part of the invention of one or more of the claims of the '426, '351, '889, and '905

Patents and are not staple articles of commerce suitable for substantial non-infringing use.

Defendants' contributory infringement is ongoing.

- 73. Defendants also have had knowledge of the '426, '351, '889, and '905 Patents at least as of the date when they were notified of the filing of this action.
- 74. Defendants' direct and indirect infringement of the '426, '351, '889, and '905 Patents is, has been, and continues to be willful, intentional, deliberate, and/or in conscious disregard of X-Mobile's rights under the patent.
- 75. X-Mobile has been damaged as a result of the infringing conduct by Defendants alleged above. Thus, Defendants are liable to X-Mobile in an amount that adequately compensates it for such infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

JURY DEMAND

X-Mobile hereby requests a trial by jury on all issues so triable by right.

PRAYER FOR RELIEF

X-Mobile requests that the Court find in its favor and against Defendants, and that the Court grant X-Mobile the following relief:

- a. Judgment that one or more claims of the '426, '351, '889, & '905 Patents have been infringed, either literally and/or under the doctrine of equivalents, by Defendants and/or all others acting in concert therewith;
- b. A permanent injunction enjoining Defendants and their officers, directors, agents, servants, affiliates, employees, divisions, branches, subsidiaries, parents, and all others acting in concert therewith from infringement of the '426, '351, '889, & '905 Patents; or, in the alternative, an award of a reasonable ongoing royalty for future infringement of the '426, '351,

889 & '905 Patents by such entities;

- Judgment that Defendants account for and pay to X-Mobile all damages to and c. costs incurred by X-Mobile because of Defendants' infringing activities and other conduct complained of herein;
- d. That X-Mobile be granted pre-judgment and post-judgment interest on the damages caused by Defendants' infringing activities and other conduct complained of herein;
- That this Court declare this an exceptional case and award X-Mobile its e. reasonable attorney's fees and costs in accordance with 35 U.S.C. § 285; and
- f. That X-Mobile be granted such other and further relief as the Court may deem just and proper under the circumstances.

Dated: October 31, 2017 Respectfully submitted,

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Attorneys for X-Mobile LLC

CERTIFICATE OF SERVICE

I hereby certify that on the 31st day of October 2017, I electronically filed the foregoing with the Clerk of the Court using the CM/ECF system, which will send notification of such filing to all counsel of record.

/s/ Zachariah S. Harrington Zachariah S. Harrington